

The Green Strides Webinar Series:
For All Schools Moving Toward the Pillars
Second Installment:
Technical Approaches to Radon
Reduction in Schools

- Wednesday, July 18, 2012
- 2:00-3:30 p.m. EDT

Participant Dial-In Number(s):

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Indoor Air Quality (IAQ)

Lou Witt:

Good afternoon. This is Lou Witt with EPA's Indoor Environments Division and welcome to the Green Strides Webinar Series for Schools Moving Toward the Future.

Agenda

- Welcome and Introductions
- Using the Webinar Technology
- Mission, Objectives and Overview
- Presentation
- Discussion and Q&A

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Indoor Air Quality (IAQ)

Our second installment today is the technical approaches to radon reduction in schools.

Welcome and Introductions

- Lou Witt, Program Analyst, US EPA-IED
- Jani Palmer, Physical Scientist, US EPA-IED
- Speakers:
 - Josh Miller, Research Scientist, MN Dept. of Health
 - Josh Kerber, Environmental Research Scientist, MN Dept. of Health.

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And we're very fortunate to have Jani Palmer, our EPA scientist, and two building experts and research scientists from the Department of Health from the State of Minnesota.

Mission: **US EPA Indoor Environments Division**

**Protecting the public's health from indoor
environmental concerns where they live, learn,
work and play.**

Healthier buildings, healthier people.

As I've said earlier, my name is Lou Witt. I'm with the EPA's Indoor Environments Division and as any good bureaucracy, we have a mission statement. Our mission is to protect the public's health from indoor environmental concerns where they live, learn, work and play. In other words, we're after healthier buildings and healthier people.

3 Pillars of GRS Criteria:

I. Environmental Impact and Energy Efficiency

II. Healthy School Environments

III. Environmental and Sustainability Education

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But we're not in this alone. Other federal agencies, in particular, the Department of Education is also very concerned about the indoor environments where people learn in this case. And to address that, they have instituted Green Ribbon Schools Award Program.

Pillar Two Criteria

- Goal: The school environment has a "net positive" impact on student and staff health.
- Pillar 2 includes two main elements:
 - **2A: An Integrated School Environmental Health Program**
 - 2B: High Nutrition and Fitness Standards

The reason I bring that up today is much of the audience is interested in this Green Ribbon Schools Award Program, and in fact, what we're doing today - this webinar, is part of their Green Strides Program to get people interested and up to speed on the issues associated with the Green Ribbon Schools award. Today, we're going to look at one of the three broad criteria that goes into this award program, and that's the healthy schools environmental aspect.

Pillar Two Criteria (2A)

An **integrated school environmental health program** based on an operations and facility-wide environmental management system that considers student and staff health and safety in all practices related to design, construction, renovation, operations, and maintenance of schools and grounds.

Sections of GRS Evaluation Framework:

- Integrated Pest Management
- Ventilation
- Contaminant Controls
 - **Radon**, carbon monoxide, mercury, tobacco smoke, chromated copper arsenate, asthma control, indoor air quality, moisture control, chemical management

Now, within the healthy schools environmental aspect of the Green Ribbon Schools award is the one that's germane to us, and that's their Pillar 2A, the integrated school environmental health program. And within that environmental health program, there are various issues that could be considered as part of the award. The one we're most particularly concerned with today is under the broad category of contaminant control and that is radon and radon gas.

Objectives

Provide technical guidance about effective radon mitigation strategies in schools.

- Compare radon's health risk to other common risks.
- Develop a strategy for follow-up tests and radon control.
- Use CRM results to modify building ventilation for radon control.
- Describe how radon mitigation depressurization works and how a system is installed.

Indoor Air Quality (IAQ)

So, to accomplish our objectives today, we're going to provide you with some technical guidance; thanks to the courtesy and the expertise of our colleagues in Minnesota, Josh Kerber and Josh Miller. In doing that, we're going to take a quick look at radon as a health risk and then, turn it over to Josh and Josh to help the audience develop a strategy for radon testing and radon mitigation.

One of our pre-registration questions was how many people had experience with radon testing in their schools and had contacted their state radon programs. We're going to learn all about that today. We're going to get some hands on technical advice for using continuous radon monitors, that's what CRM stands for, and how useful that is in addressing radon within your schools.

And then by the time we're done in roughly an hour or an hour and 20 minutes, you'll have a good working knowledge of radon mitigation depressurization systems and how a system could be installed in your school either by a school maintenance facility staff or radon professionals that can do that.

So, that's the context that we're kind of operating within today to provide you with some basic but technical information on radon in schools, how to test for and how to fix, and that fits within the larger arena of the Green Strides Program, which is to augment and promote the Green Ribbon Schools award. So, that's where we are and where we're going next is I'm going to turn it over

to my colleague Jani Palmer who is a scientist here at EPA, and she's going to provide you with some background on radon and why it's an important issue for our schools to consider. Jani?

Overview

- Radon is one of the most hazardous indoor pollutants.
- Radon is the leading cause of lung cancer among non-smokers.
- Thousands of classrooms nationwide have elevated radon levels.
- The only way to know is to test; EPA recommends testing all schools for radon and fixing high levels.

Jani Palmer:

Hello, Lou and thanks for the warm welcome. And to all, thanks so much for attending. My job here is just to provide an overview. Indoor air quality pollutant levels are often two to five times higher indoors. And sometimes, they're up to a hundred times higher.

Radon is one of the most hazardous indoor pollutants. Radon is a cancer-causing radioactive gas found all over the U.S. in any type of building. It comes from the natural breakdown of uranium in soil, rock, and water and gets into the air you breathe. You can't smell it or taste it.

Twenty-one thousand deaths are caused each year by radon in the U.S. The surgeon general has warned that radon is the second leading cause of lung cancer in the U.S. today. Only smoking causes more lung cancer deaths.

Thousands of schools are affected by radon.

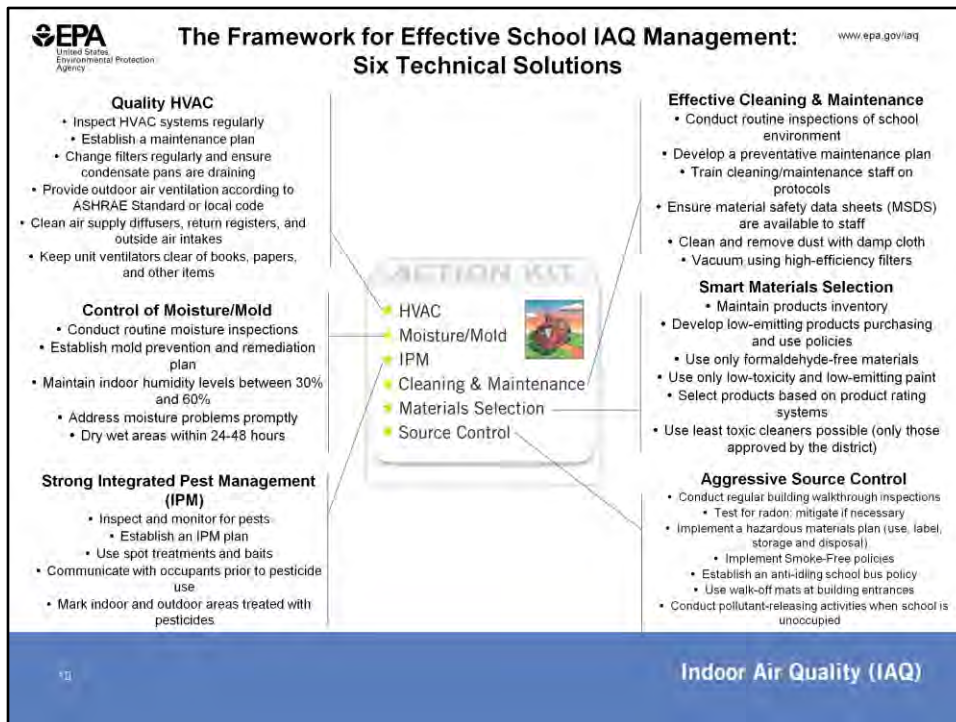
In the National School Radon Survey, nearly 20 percent of schools had at least one classroom with high radon levels. Children and staff spend a substantial portion of their time in schools. High radon level in a classroom affects the 20 to 30 plus children and staff that will spend time in that classroom.

So how do you know if you have radon? The only way to know is to test.

Several states have laws that require school testing and some even requires schools built with radon-resistant construction features. Testing and fixing radon in your school can be affordable.

Costs can be quite variable depending on how many rooms have high levels,

where those rooms are located, and other factors. Costs can be on the lower side if few classrooms are high or if the school is able to reduce radon by managing the HVAC system.



In addition to radon, EPA has worked to help schools incorporate management of a variety of IEQ issues. EPA's Indoor Air Quality Tools for Schools Program you see here provides clear and comprehensive guidance to schools on how to build and sustain an effective IEQ management program.

Radon control is found in the Tools for Schools Program under Aggressive Source Control shown on the bottom right hand side of the screen.

Successful school IEQ management programs are works in progress, and most districts put the components of success in place over time. The Framework for Effective School IEQ Management Key Drivers shown here is this system enhanced by continuous enforcement that helps with focused planning, implementing, and evaluating your particular actions or needs.

But how exactly does a school test and mitigate for radon? A practical first step is to refer to the IEQ Tools for Schools framework in our Managing Radon in Schools guidance. And you can find it online and we'll provide that resource at the end of the webinar as well.

Radon testing and fixing can be straightforward processes, steps include procuring and placing radon test devices then collecting them, and sending to a lab for analysis. Based on results, schools will decide what to do next. And to help you along the way, here are two who have successfully used the Key Drivers for radon in hundreds of buildings. Josh Miller and Josh Kerber, scientists at the Minnesota Department of Health, please take it away.

Effective Radon Management - Remember the Six Key Drivers



www.epa.gov/iaq/schools/pdfs/kit/framework.pdf

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